Arranging conditionals in a logical chain

In this lesson we'll look at how to use conditionals to write a logic chain of statements.

We already know that a conditional statement is an if/then statement where the first part is the hypothesis and the second part is the conclusion, like this:

"If A, then B."

Logic chains (with conditionals)

A logic chain is something we make by stacking linked conditional statements back-to-back. Here's a logic chain with three conditional statements:

If A, then B.

If B, then C.

If C, then D.

If events are listed in a logical chain like this, then you can conclude

If A is true, then C is also true (through B), and

If A is true, then D is also true (through B and C).

Let's look at an example.

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Example

What is the missing step in the three-step logic chain shown here?

1) If juice gets spilled on the table, then it will get sticky.

2)

3) If the ants come, then we will need an exterminator.

Let's think about what creates this pattern:

If A, then B.

If B, then C.

If C, then D.

We can fill this in with what we know.

If **juice gets spilled on the table**, then **it will get sticky**.

If B, then C.

If **the ants come**, then **we'll need an exterminator**.

Linking the last part of the first conditional with the first part of the last conditional lets us form the second, missing conditional:

If the table is sticky, then the ants will come.

And then we can see the whole logic chain filled in:

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If **juice gets spilled on the table**, then **it will get sticky**.

If **the table is sticky**, then **the ants will come**.

If **the ants come**, then **we'll need an exterminator**.

Let's look at another example.

Example

What is the logical conclusion of the logic chain?

1) If I clean my house, then I will invite over some company.

2) If I invite over some company, then I will cook dinner.

3) If I cook dinner, then my kitchen will be dirty.

The logic chain is in order, from

"If I clean my house," to

"I will invite over some company," to

"I will cook dinner," to

"My kitchen will be dirty."

To come up with the conclusion of the logic chain, we can hook the first statement with the last statement.

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“If I clean my house, then my kitchen will be dirty.”

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